Bäumr-AG

Concrete Saw

User Manual

[Revision 3.0 August 2018]

READ THIS MANUAL CAREFULLY BEFORE USE – FAILURE TO DO SO MAY RESULT IN INJURY, PROPERTY DAMAGE AND MAY VOID WARRANTY. • KEEP THIS MANUAL FOR FUTURE REFERENCE. • Products covered by this manual may vary in appearance, assembly, inclusions, specifications, description and packaging.

Safety

Safety messages are designed to alert you to possible dangers or hazards that could cause death, injury or equipment or property damage if not understood or followed. Safety messages have the following symbols:

You WILL be KILLED or SERIOUSLY INJURED if you do not follow instructions.

You CAN be KILLED or SERIOUSLY INJURED if you do not follow instructions.

You CAN be INJURED if you do not follow instructions or equipment damage may occur.

It is vital that you read and understand this user manual before using the product, including safety warnings, and any assembly and operating instructions. Keep the manual for future reference.

Safety precautions and recommendations detailed here must be fully understood and followed to reduce the risk of injury, fire, explosion, electrical hazard, and/or property damage.

Safety information presented here is generic in nature – some advice may not be applicable to every product. The term "equipment" refers to the product, be it electrical mains powered, battery powered or combustion engine powered.

- **Before Use** - If you are not familiar with the safe operation/handling of the equipment, or are in any way unsure of any aspect of suitability or correct use for your application, you should complete training conducted by a person or organization qualified in safe use and operation of this equipment, including fuel/electrical handling and safety.
- Do NOT operate the equipment in flammable or explosive environments, such as in the presence of flammable liquids, gases or dust. The equipment may create sparks or heat that may ignite flammable substances.
- Keep clear of moving parts.
- Equipment may be a potential source of electric shock or injury if misused.
- Do NOT operate the equipment if it is damaged, malfunctioning or is in an excessively worn state.
- Do NOT allow others to use the equipment unless they have read this manual and are adequately trained.
- Keep packaging away from children - risk of suffocation! Operators must use the equipment correctly. When using the equipment, consider conditions and pay due care to persons and property.

General Work Area Safety

- Work areas should be clean and well it.
- Do not operate the equipment if bystanders, animals etc are within operating range of the equipment or the general work area.
- If devices are provided for connecting dust extraction / collection facilities, ensure these are connected and used properly. Dust collection can reduce dust-related hazards.

General Personal Safety

- Wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect from eye and ear injury, poisoning, burns, cutting and crush injuries. Protective equipment such as safety goggles, respirators, non-slip safety footwear, hard hat, hearing protection etc should be used for appropriate equipment / conditions. Other people nearby should also wear appropriate personal protective equipment. Do not wear loose clothing or jewellery, which can be caught in moving parts. Keep hair and clothing away from the equipment.
- Stay alert and use common sense when operating the equipment. Do not over-reach. Always maintain secure footing and balance.
- Do not use the equipment if tired or under the influence of drugs, alcohol or medication.
- This equipment is not intended for use by persons with reduced physical, sensory or mental capabilities.

General Fuel Safety

- Petrol/fuel/gasoline is extremely flammable – keep clear of naked flames or other ignition sources.
- Do not spill fuel. If you spill fuel, wipe it off the equipment immediately – if fuel gets on your clothing, change clothing.
- Do NOT smoke near fuel or when refuelling.
- Always shut off the engine before refuelling.
- Do NOT refuel a hot engine.
- Open the fuel cap carefully to allow any pressure build-up in the tank to release slowly.
- Always refuel in well ventilated areas.
- Always check for fuel leakage. If fuel leakage is found, do not start or run the engine until all leaks are fixed.

General Carbon-Monoxide Safety

- Using a combustion engine indoors **CAN KILL IN MINUTES**. Engine exhaust contains carbon-monoxide – a poison you cannot smell or see.
- Use combustion engines OUTSIDE only, and far away from windows, doors and vents.

General Equipment Use and Care

- The equipment is designed for domestic use only.
- Handle the equipment safely and carefully.
- Before use, inspect the equipment for misalignment or binding of moving parts, loose components, damage or any other condition that may affect its operation. If damaged, have the equipment repaired by an authorised service centre or technician before use.
- Prevent unintentional starting of the equipment - ensure equipment and power switches are in the OFF position before connecting or moving equipment. Do not carry equipment with hands or fingers touching any controls. Remove any tools or other items that are not a part of the equipment from it before starting or switching on.
- Do not force the equipment. Use the correct equipment for your application. Equipment will perform better and be safer when used within its design and usage parameters.
- Use the equipment and accessories etc. in accordance with these instructions, considering working conditions and the work to be performed. Using the equipment for operations different from those intended could result in hazardous situations.
- Always keep equipment components (engines, hoses, handles, controls, frames, housings, guards etc) and accessories (cutting tools, nozzles, bits etc) properly maintained. Keep the equipment clean and, where applicable, properly lubricated.
- Store the equipment out of reach of children or untrained persons. To avoid burns or fire hazards, let the equipment cool completely before transporting or storing. Never place or store the equipment near flammable materials, combustible gases or liquids etc.
- The equipment is not weather-proof, and should not be stored in direct sunlight, at high ambient temperatures or locations that are damp or humid.
- Do not clean equipment with solvents, flammable liquids or harsh abrasives.
- For specific equipment safety use and care, see Equipment Safety.

General Electrical Safety

- Inspect electrical equipment, extension cords, power bars, and electrical fittings for damage or wear before each use. Repair or replace damaged equipment immediately.
- Ensure all power sources conform to equipment voltage requirements and are disconnected before connecting or disconnecting equipment.
- When wiring electrically powered equipment, follow all electrical and safety codes.
- Wherever possible, use a residual current device (RCD).
- High voltage / high current power lines may be present. Use extreme caution to avoid contact or interference with power lines. Electrical shock can be fatal.

General Electrical Safety

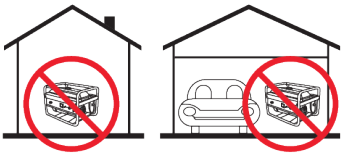
- Electrically grounded equipment must have an approved cord and plug and be connected to a grounded electrical outlet.
- Do NOT bypass the ON/OFF switch and operate equipment by connecting and disconnecting the electrical cord.
- Do NOT use equipment that has exposed wiring, damaged switches, covers or guards.
- Do NOT use electrical equipment in wet conditions or in damp locations.
- Do NOT use electrical cords to lift, move or carry equipment.
- Do NOT coil or knot electrical cords, and ensure electrical cords are not trip hazards.

General Service Information

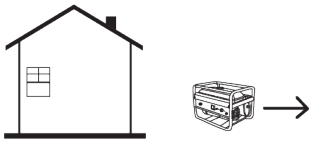
- The equipment must be serviced or repaired at authorised service centres by qualified personnel only.
- Replacement parts must be original equipment manufacturer (OEM) to ensure equipment safety is maintained.
- Do NOT attempt any maintenance or repair work not described in this manual.
- After use, the equipment and components may still be hot – allow the equipment to cool and disconnect spark plugs and/or electrical power sources and/or batteries from it before making adjustments, changing accessories or performing repair or maintenance.
- Do NOT make adjustments while the equipment is running.
- Perform service related activities in suitable conditions, such as a workshop.
- Replace worn, damaged or missing warning/safety labels immediately.

⚠ DANGER ⚠

Using an engine or wood/charcoal/gas fuelled appliance indoors CAN KILL YOU IN MINUTES. Engine exhaust and wood/charcoal/gas fumes contain carbon monoxide. This is a poison you cannot see or smell.



NEVER use inside a building, home, garage, boat, caravan or tent EVEN IF doors and windows are open.



Only use OUTSIDE and far away from windows, doors, and vents.

Avoid other hazards - READ MANUAL BEFORE USE.

GENERAL:

- Do not operate in a hazardous location. Such areas include where there is a risk of explosion of petrol fumes, leaking gas or explosive dusts.
- Do not operate in a confined area where exhaust gases or wood/charcoal/gas fumes could reach dangerous concentrations.

PRODUCTS FEATURING AN ENGINE

- Follow all warnings in the section titled "GENERAL".
- Explosion hazard - never smoke while refuelling.
- Take care not to spill fuel. When refuelling the engine, ensure that the engine has been allowed to cool. Prevent spilling of fuel as this may also ignite with a hot engine.
- Never refuel while engine is running.

GENERATORS

- Follow all warnings in the sections titled "GENERAL" and "PRODUCTS FEATURING AN ENGINE".
- The output of this generator is potentially lethal. The generator should not be connected to a fixed electrical installation except by an appropriately licensed person.
- Not weatherproof – protect your machine. This machine is not weatherproof and should not be exposed to direct sunlight, high ambient temperature, damp conditions, wet conditions or high humidity conditions.

Safety Symbols

The product may have safety warning labels attached to it, explained below. Understand the symbols on your product and their meanings. If any stickers become unreadable, unattached etc, replace them.

Flammable Material Hazard
Flammable liquids, gases or substances etc may present. Avoid ignition sources and open flames. Danger of fire.

Read User Manual
Read and fully understand product safety warnings, operation, procedures etc before using the product.

Use Hand Protection
Wear appropriate hand protection and take due care as the product or use of the product may present hand hazards.

Carbon-Monoxide Hazard
Do not use the product in confined areas or without adequate ventilation. Carbon-monoxide poisoning can be fatal.

Electrocution / Electrical Shock Hazard
High voltage or high current electricity may be present or required by the product. Take due care when handling electrical products, cables, plugs and leads. Electrical shock can be fatal.

Toxic Fumes / Dust Hazard
Using the product or by-products from use may produce fumes, smoke or particles that could be harmful if inhaled. Wear appropriate breathing protection and have adequate ventilation.

Explosive Material Hazard
Combustible liquids, gases or substances etc may be present. Avoid ignition sources and open flames. Danger of explosion.

Cutting / Amputation Hazard
The product may have blades, edges or mechanical devices that can cause severe cut injury to fingers, limbs etc. Take due care when handling and using the product.

Crush Hazard
The product may have blades, edges or mechanical devices that can cause severe crush injury to fingers, limbs etc. Take due care when handling and using the product.

Single Operator Only
The product must be operated by a single person only. More than one person operating the product may introduce additional hazards.

Use Face Protection
Wear appropriate full-face protection and take due care as the product or use of the product may present face and eye hazards.

Use Foot Protection
Wear appropriate foot protection and take due care as the product or use of the product may present foot hazards.

Use Eye / Ear / Head Protection
Wear appropriate eye and / or ear and / or head protection and take due care as the product or use of the product may present eye, hearing and head hazards.

Running Hazard
Do not run on or near the product as doing so may present a fall hazard.

Diving Hazard
Do not dive into the product as doing so may present a neck / head injury hazard.

Adult Supervision Required
Always supervise children and other users of a product to prevent drowning or injury.

Skin Penetration / Puncture Hazard
The product may produce pressure, emit liquids or objects that can cause severe injury to fingers, limbs, blood etc. Take due care when handling and using the product.

Hot Surface Hazard
Be aware that the product may produce high temperatures and hot surfaces that can cause burn injuries.

Flying Debris Hazard
Be aware that the product or use of the product may present hazards produced by flying debris. Wear appropriate clothing and protectiove devices.

Moving Parts Hazard
Be aware that the product contains or uses mechanical devices that move or rotate. Always wait for moving parts to stop fully before handling the product, adjusting, maintenence etc.

 **Carbon-Monoxide Hazard** Do not use the product in confined areas or without adequate ventilation. Carbon-monoxide poisoning can be fatal.	 **Pull Hazard** Be aware that the product contains or uses mechanical devices that can pull in objects and can cause severe injury to fingers, limbs etc. Take due care when handling and using the product.	 **Slope / Fall Injury Hazard** Be aware that using the product on sloping surfaces or in slippery conditions may present additional dangers from falls and contact with blades, moving parts, hot surfaces etc.	 **"Slam Dunk" Warning** Do NOT attempt "slam dunk" maneouvres as this may result in severe injury due to falling, product breakage or collapse etc.
 **Electrocution / Electrical Shock Hazard - Outdoor** High voltage or high current electricity may be present or required by the product. Do NOT use in rain, damp or wet conditions. Electrical shock can be fatal.	 **Electrocution / Electrical Shock Hazard - Disconnect** High voltage or high current electricity may be present or required by the product. Always disconnect the product from the electrical supply before handling the product, adjusting, maintenence etc.	 **Power Line Electrocution Hazard** High voltage / high current power lines may be present. Use extreme caution to avoid contact or interference with power lines. Electrical shock can be fatal.	 **"Kick-Back" Hazard** High level of "kick-back" hazard that can cause the machine to suddenly rotate towards operator. Kick-back injury can be fatal.
 **Winch Operator Position Hazard** Do NOT stand between winch and load. Do NOT use winch to move people.	 **Winch Lift Hazard** Do NOT LIFT load vertically. Use machine to PULL only.	 **Cable Hazard** Ensure that load bearing cable is not kinked or knotted.	 **Winch Cable Hazard** Ensure that there is a minimum number of cable coils on winching mechanism.
 **Winch Hook Hazard** Carry hook to load – do NOT throw or run.	 **Flash / Blinding Hazard** Wear appropriate eye protection for welding. Dorect exposure to weld arcs may cause permanent eye injury.	 **Laser Hazard** Laser may be in use – do NOT look directly at laser, or allow others to.	

Equipment Safety

Concrete saws are high-speed, fast-cutting equipment with exposed blades that can cause serious or fatal injury if not used correctly or without taking proper safety precautions. **It is extremely important that you read and fully understand the information in this section and all other safety warnings / recommendations and usage instructions before using the equipment**.

Operator

- If you are untrained in the use of a concrete saw, it is highly recommended that you be trained/instructed by a suitably qualified or experienced person before using the machine.
- NEVER operate the machine when tired, or under the influence of any substance (medication, alcohol, drugs etc) that may impair your judgement, alertness, physical strength, vision or dexterity.
- Maintain sure-footing and balance always when using or handling the machine and have full awareness of your surroundings and any possible hazards.
- Prolonged use may lead to health complications, such as carpal tunnel syndrome, due to vibration. To help reduce the possibility of such conditions, wear gloves, take breaks frequently, keep fingers and hands warm, and maintain the equipment for optimal operation and minimal vibration. It is recommended to seek medical advice if you feel numbness or burning sensations in fingers/hands.

Clothing and Protective Equipment – All Operators and Assistants

- Wear approved safety goggles, or safety glasses with adequate top and side protection. In addition to eye protection, wearing a full-face shield is highly recommended.
- Wear suitable hearing protection.
- Wear approved respiration equipment.
- Wear heavy-duty, non-slip leather or protective gloves.
- Wear approved heavy-duty safety boots, with steel toe-caps and non-slip soles.
- Wear suitable overalls or work clothing that fits snugly, but does not restrict movement. Avoid loose fitting clothing, scarves, jewellery etc and keep long hair contained to avoid getting caught or pulled by the machine etc.

Work Area Safety

- Use EXTREME CAUTION to avoid underground power lines – contact can be fatal. Contact the necessary utilities authority etc to ensure that it is safe to use the machine.
- The abrasive cutting action of the machine can generate dust and vapours which may contain harmful chemicals. Know the nature of the material being cut before cutting and ALWAYS use appropriate dust mask or respirator equipment.
- Ensure that any person other than the operator and any assistants is kept a minimum 10m (30') away from where the equipment is being used.
- Be aware of fire risks resulting from machine use. Ensure that the machine exhaust and spark arrestor (if equipped) is well maintained and that engine is tuned correctly.
- Refuel outdoors only. Avoid fuel spillage. Start the machine at least 3m (10') away from the fuelling location.

Operational Safety

- Do NOT use the machine if the throttle or any safety guard or mechanism is not installed or is not operating correctly – have the machine inspected and repaired at an authorised service centre before using it again.
- Fully understand how to safely operate the machine and the sawing process to avoid "kick-back". See Operation.
- Always hold the machine firmly with both hands during operation. Always use the machine handles.

- Do NOT use the equipment for purposes it is not designed for, such as wood sawing.

Transportation Safety

- Always STOP the engine before transporting the machine, or working on it (refuelling, adjusting etc).
- When transporting the machine in a vehicle, ensure the engine is OFF. Secure the machine in an upright position to prevent tip-over, machine damage or fuel spills.

Table of Contents

Parts Identification

No.	Name	No.	Name
1	Machine	6	Tools / Accessories: Spark Plug Multi-Tool Screwdriver (small) 5 / 6mm Allen Key 12 / 16mm Spanner
2	Cutting Wheel		
3	Flange (2)		
4	Spacer		
5	Wheel Bolt		

Machine Components

The saw comes supplied with all parts required for normal use. A basic toolkit may also be included. It is strongly recommended that you familiarise yourself with all major components of the machine before using it or performing any maintenance tasks.

No.	Name	No.	Name
1	Cutting Disc	10	Drive Belt Cover
2	Upper Handle	11	Wheels
3	Choke Control	12	Air Filter Cover (filter inside)
4	Exhaust	13	Engine ON / OFF Switch
5	Fuel Filler Cap	14	Throttle Lockout
6	Rear Handle	15	Throttle Control
7	Spark Plug (under cover)	16	Coolant Tube (includes valve and hose connection)
8	Cutting Guard	17	Throttle Lock
9	Starting Cord	18	Spindle

The section circled in red is for when the unit is configured as a chainsaw and when the unit is configured as a concrete saw this will be a blank chamber and can be disregarded. The blue circle is the anti-vibration system.

Before Use Checklist

Ensure that you carry out all procedures below before starting the engine or operating the equipment. **Failure to follow the checklist and carry out the procedures correctly may result in making the product warranty void**. • Wear suitable protective gloves when handling cutting wheels.

Assembly

Assembly is limited to installing the cutting wheel only. Prior to assembly, unpack all components and check that all items have been received. See Cutting Wheel.

Air Filter

The air filter is used to prevent dirt and other particles from possibly entering the engine and causing internal damage to it. The air filter requires regular maintenance.

Always check the air filter before starting the engine. See Air Filter.

Fuel

Petrol/fuel/gasoline is extremely flammable – keep clear of naked flames or other ignition sources. • The engine must be OFF and cool before refuelling. • Always pre-mix the fuel before placing it in the fuel tank. • **The fuel to 2-stroke engine oil mixture ratio is 25:1.**

Adequately fill the fuel tank with the correct fuel type.

- Use non-ethanol unleaded petrol mixed at a **25:1** ratio with 2-stroke engine oil (higher RON values and good quality 2-stroke oil will provide best engine performance). Do not use old or contaminated fuel/oil. Fuel/oil mix ratio examples are shown below.

Petrol (Litre)	1	2	5	10
Oil (Millilitre)	40	80	200	400

Gas (US Gal)	0.5	1	2	3
Oil (Fl. Oz)	2.56	5.12	10.24	15.36

To fill or top up fuel:

1. Place the machine in a horizontal position on a flat and level surface with the fuel filler cap facing up.
2. Clean the machine around the fuel filler so that no dirt or other material enters the engine when the cap is removed.
3. Remove (rotate left) the fuel filler cap.
4. Using a funnel, carefully fill the tank with fuel. Do not fill above the top of the strainer (if equipped) or otherwise overfill the tank.
5. When finished, reinstall (rotate right) the fuel filler cap until firm. Wipe away any residual fuel from the machine. If fuel has been spilt, move the machine away from the spillage before starting the engine.

Spark Plug

The spark plug may come disconnected from the spark plug lead. If this is the case, place the electrical lead over the spark plug terminal and push it down so that it connects firmly with the terminal. See Spark Plug .

Drive Belt Tension

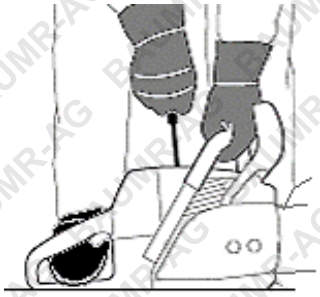
Correct drive belt tension is extremely important in terms of both machine efficiency, service life and operator safety. If you experience the cutting wheel stopping or noticeable belt slip when using the machine, stop immediately and adjust tension. See Drive Belt.

Engine Starting and Stopping

Ensure that the cutting wheel is not in contact with, or near any objects before starting the engine. • Once the engine is running at sufficient speed, the clutch will engage and begin rotating the cutting wheel. • **Do NOT start the engine with the cutting wheel in a cut or touching any object**. • If the engine is new or is being re-started after completely running out of fuel, it may be necessary to pull the starter cord several times for fuel to reach the carburettor.

Starting the Engine

1. **CHOKE** – If the engine is cold, place the choke (**A**) in the "COLD" position. If the engine is warm or the ambient temperature is high, place the choke in the "RUN" position.
2. **IGNITION** – Place the engine ON/OFF switch (**B**) in the "ON" ("**I**") position.
3. **START** – When starting the engine, ensure that the machine is on the ground, and steady it with one foot in the rear handle and one hand gripping the top handle before pulling the starter cord. Slowly pull out the starter cord (**C**) until you feel it engage with the engine, then pull it out rapidly. Allow the starter cord to rewind slowly – do not let it "snap" back.

   On first use, the starter cord may need to be pulled several times to draw fuel into the carburettor. Once the engine "sputters" or "kicks", place the choke (**A**) in the "RUN" position, squeeze the throttle once then release it, then repeat from step 3.
4. **WARM-UP** – Allow the engine to warm-up and run smoothly. If choke is being applied, gradually move the choke (**A**) to the "RUN" position. For some models, the choke automatically shifts to the "RUN" position when the throttle is squeezed.

If the engine does not start, repeat step 3 onward. If the engine fails to start after several attempts, refer to Troubleshooting.

Stopping the Engine

To stop the engine, release the throttle and place the engine ON/OFF switch in the "OFF" position.

Environmental Considerations

Altitude – If the engine is being used in altitudes at or above 1500m (approximately 5000'), adjustments to the carburettor may be required. This is because there is less oxygen in the air as altitude increases, which effectively "enriches" the ratio of fuel to air going into the engine, and the higher the altitude, the richer the fuel mixture becomes. If the engine is being permanently operated at high altitude, it is recommended to have an authorized service centre make the necessary carburettor adjustments. If the engine is used occasionally at altitude (not extreme altitudes), no adjustments should be required, however, a slight decrease in engine performance can be expected.

Concrete Saw Operation

Concrete saws are high-speed, fast-cutting equipment with exposed blades that can cause serious or fatal injury if not used correctly or without taking proper safety precautions. **It is extremely important that you read and fully understand the information in this section and all other safety warnings / recommendations and usage instructions before using the equipment**. • Always wear suitable protective clothing and equipment when using the machine. • Inspect the machine before each use and check for wear or damage. If the machine is damaged, have it inspected and repaired at an authorised service centre before using it again. • If you experience excessive vibration from the machine during operation, this may indicate wear or damage. It is recommended to have it inspected and repaired before using it again. • Be aware that once the engine is running, the cutting wheel will be rotating and parts of the machine may be extremely hot. • Ensure that the cutting wheel is installed correctly, the drive belt is tensioned correctly, and the cutting guard is installed before using the machine.

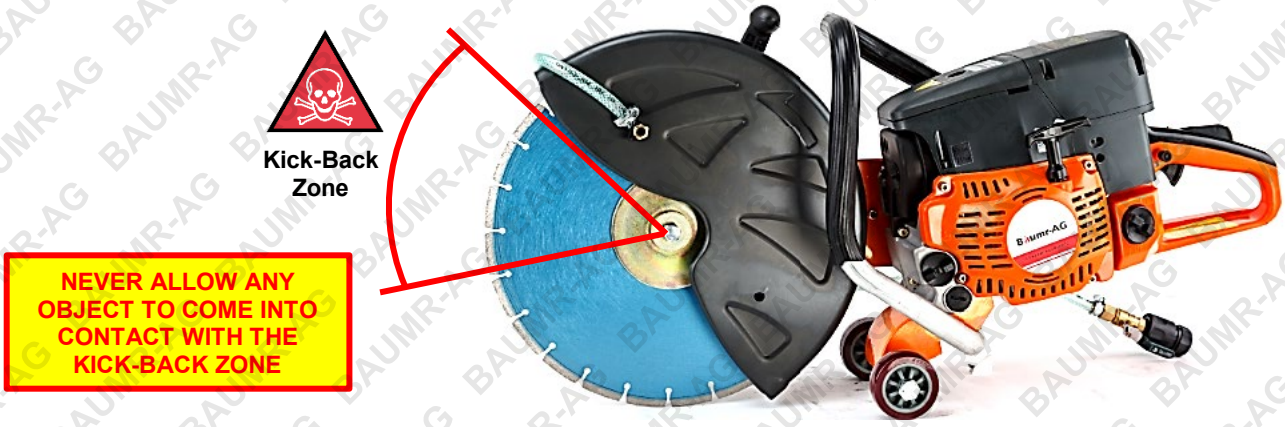
When the engine is idling (slowest continuous running speed), the clutch should disengage, preventing the cutting wheel from being rotated. As engine speed increases, the clutch engages and rotates the cutting wheel. Note the following recommendations:

- Operate the engine at full speed when cutting.
- Cut according to the recommended methods. If in doubt, do NOT cut – seek professional advice.

Understanding and Avoiding "Kick-Back" and Other Reactionary Forces

Kick-back and other reactionary forces can cause loss of control of the machine and can result in serious, even fatal injury – use the machine in ways to avoid kick-back and other reactive forces at all times.

When the cutting wheel is rotating, many forces are created, such as the ability to cut. The contact point between the cutting wheel and object to cut is critical. If the saw is not used correctly, cutting forces may become "reactionary", in that instead of the cutting wheel rotating, a reactionary force is created. Many factors affect the occurrence and force of reaction, such as cutting speed, cut depth, and cutting wheel condition.



Kick-Back

"Kick-back" is a reactionary force that causes the cutting wheel to rotate up and back, against the direction of cut. Kick-back can also be thought of as the cutting wheel "kick-back zone" "digging in" to the object to be cut and momentarily stopping or significantly slowing rotation of the cutting wheel, which causes the saw to suddenly and quickly rotate backwards towards the operator. To avoid kick-back:

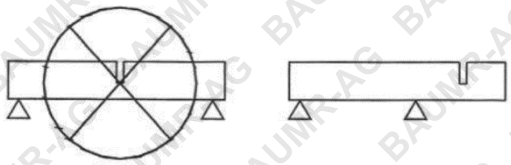
- Do NOT use the tip of the cutting wheel for cutting or allow it to make contact with any object.
- Always hold the machine firmly by both front and rear handles when operating.
- Maintain cutting wheel sharpness and the correct cutter shape and cutting depth.

- Do NOT use the machine in any way where the machine cannot be securely held with both hands or the entire machine is not visible to the operator.
- Use extreme caution when inserting the saw into a previous cut.
- Be alert to forces that may pinch the cutting wheel.

Pull-In

"Pull-in" is a reactionary force that causes the saw to pull forward in the direction of cut. Pull-in can also be thought of as the bottom of the cutting wheel being caught, pinched or "digging in" to the object to be cut and momentarily stopping or significantly slowing rotation of the cutting wheel, which causes the saw to suddenly and quickly pull forward and away from the operator. To avoid pull-in:

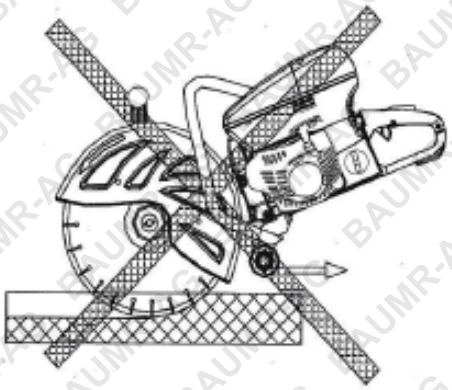
- Ensure that the position of the cut in relation to the workpiece avoids closing.
- Use supports to help prevent cuts closing in over the cutting wheel.

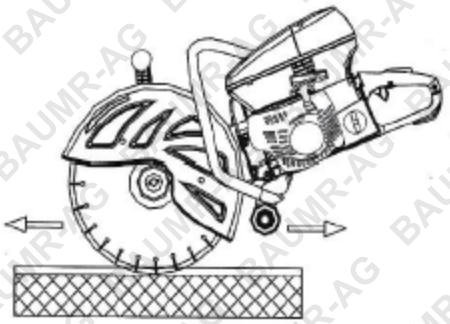


Basic Cutting Guidelines

The following information are general guidelines to concrete saw use:

- Be alert to kick-back dangers at all times.
- Do NOT "plunge" cut or attempt deep, single-pass cuts.
- Keep the cutting guard as far forward (covering the cutting wheel) as practical.
- ALWAYS cut with the cutting wheel vertical (90° to the workpiece).
- Make small depth cuts, moving the saw back and forth through the cut, gradually increasing depth.

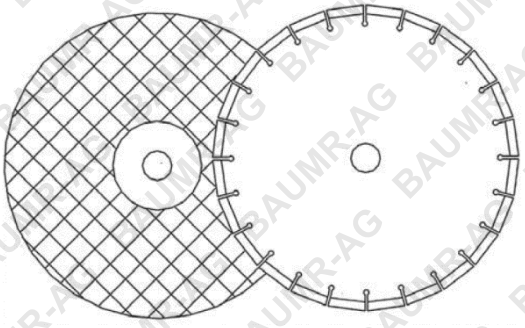




Cutting Wheels and Discs

There are 2 types of cutting wheels that can be used with the saw – synthetic resin abrasive disc, and diamond coated toothed steel.

- NEVER use a cutting wheel that has a slower speed rating than the saw (5100RPM / 90m/s).
- NEVER use a cutting wheel to cut material it is not designed to cut.
- Use only replacement blades recommended or supplied by the manufacturer.



Abrasive Types

The cutting material in abrasive discs consists of abrasive grit bonded to the disc, which is generally made from a fibreglass material.

Cutting performance is determined by the type and size of the abrasive grit, and the type and hardness of the bonding agent. "Soft" cutting discs cut faster, however, also wear faster. "Hard" discs cut slower, but last longer.

- Do NOT use water cooling with abrasive cutting wheels.
- Do NOT allow synthetic resin cutting wheels to be exposed to water or moisture – they absorb moisture and can become unbalanced if any moisture is absorbed.
- Before using a cutting disc, check it carefully for damage, such as cracking or chipping. Place you finger through the spindle hole in the disc and lightly tap the outer edge of the disc with a piece of wood – the disc should "ring". If not, the disc may be damaged or unbalanced and should not be used.
- Abrasive discs cannot be "sharpened".

Diamond Types

The cutting wheels use a steel platter that often features "teeth" cut into the outer edge. The outer edge and teeth have a diamond grit bonded to them that can be clearly seen. If the diamond edge can no longer be seen, the cutting wheel requires replacing.

Generally, diamond cutting wheels have a long service life if used properly and maintained Water cooling is recommended at all times. If a water supply is not available, lift the wheel from the cut every 30 seconds and allow it to spin in the air for 10 seconds each time to cool.

- NEVER attempt to cut metals using diamond cutting wheels.
- Always check that the direction of rotation for the cutting wheel is the same as the saw.
- Always lubricate diamond cutting wheels with water during use. Connect the coolant tube to a suitable water supply and keep the cutting wheel lubricated.
- Do not use excessive downward pressure as this can lead to dulling of the cutting edges.
- Diamond cutters can be dulled by the metallic bond melting over the diamond grit. To "sharpen" a dulled cutting wheel, make several cuts into a piece of "diamond dressing stone", fire-brick or suitably abrasive material – this is to grind away the metallic bond and again expose the diamond grit.

Maintenance

Running combustion engines in confined areas **CAN KILL IN MINUTES**. Engine exhaust fumes contain carbon-monoxide – a deadly gas that you cannot smell or see. NEVER run a combustion engine in confined areas EVEN IF windows and doors are open. ONLY run combustion engines OUTDOORS and away from doors, windows and vents. • Petrol / fuel / gasoline is extremely flammable – keep clear of naked flames or other ignition sources. • Do not have the engine running during inspection and maintenance unless specifically required. • The engine should be cool enough to touch before performing maintenance activities. • Some maintenance activities may be beyond the scope of some users. Do NOT attempt procedures that you are not comfortable with, or do not have the necessary tools, experience or knowledge for – take the unit to an authorised service centre or qualified technician for servicing. • Harsh operating environments such as extreme temperatures, dust etc may necessitate more frequent maintenance. • **Failure to follow the maintenance schedule, using incorrect or non-compatible accessories or replacements parts, or general negligence may result in making the product warranty void**.

To keep the machine performing at optimal efficiency, regular checks and maintenance is required. The maintenance schedule below specifies preventative maintenance checks and necessary maintenance tasks and how often they should be performed. The schedule applies to multiple engines; some engines may not include some components, so maintenance on those components is not applicable.

Maintenance Schedule

Use the following maintenance schedule for a list of regular maintenance tasks and how often they need to be performed. Maintenance frequency is based on average usage. Be aware of how much the machine is used and be sure to follow the schedule according to time or usage, whichever comes first.

Towards the end of this document is a form you can use for maintenance record keeping. It is recommended that you keep a reference of all maintenance.

Major Servicing and "Heavy-Duty" Usage - For engines that are subject to "heavy-duty" use, which can be defined as being used under loads of 85% or more and / or in use more than approximately 300 hours per year (for example, generators and water pumps), more frequent "Major Service" maintenance is required. In addition to normal service requirements, and as with many smaller machine and off-road bike engines, the following parts (as applicable for petrol, diesel or 2-stroke engines) may require replacement during a major service:

- Piston rings.
- Big-end bearings.
- Small-end bearings.
- Gudgeon pin.
- Oil rings.
- Gaskets and seals.
- Valve seats.

Inspection of the following items is required:

- Piston for cracks and stress fractures.
- Bore for wear requiring reconditioning.
- Full machine for broken, worn or loose parts.

Failure to follow the maintenance schedule, using incorrect or non-compatible accessories or replacements parts, or general negligence may result in making the product warranty void.

Maintenance Schedule – 2-Stroke Engines / Machines

Component / Task	Every Use	After First 5 Hours Use	3 Months / 25 Hours Use	6 Months / 50 Hours Use	12 Months / 100 Hours Use	Major Service – Normal Use 24 Months / 200 Hours Use	Major Service – Heavy-Duty Use Every 200 Hours Use
Loose Engine / Machine Fasteners	Check. Tighten as necessary						
Air Filter	Check	Clean. Replace as necessary				Replace	
Spark Plug			Check	Replace			
Spark Arrestor *							
Fuel Filter *			Clean. Replace as necessary			Replace	
Fuel Strainer *	Check						
Float Bowl *				Clean			
Fuel Lines / Hoses	Check	Replace as necessary					
Fuel Tank					Flush and clean		
Idle Speed					Check. Adjust as necessary		
Engine Tune			Check. Adjust as necessary				
Cylinder Head Fasteners					Check. Tighten as necessary		
Combustion Chamber					Check. Clean / de-coke as necessary		
Major Service						Perform	
Cutting Blade / Chain *	Check	Sharpen. Replace as necessary					
Chain Lubricant *		Check. Add as necessary.					
Chain Lubricant Strainer *				Clean. Replace as necessary			

* Where applicable.

Air Filter

Operating the machine without a functional air filter may cause severe engine damage and will void any warranty. • A dirty or oil saturated air filter will restrict air flow, which can be mistaken as fuel system problems. Check the condition of the air filter before adjusting engine idle speed, where applicable. • If the air filter is damaged (torn, broken, disintegrating), replace it.

The air filter is used to prevent dirt and other particles from possibly entering the engine and causing internal damage to it. The air filter requires regular maintenance as per the maintenance schedule.

Inspection and Cleaning

Inspect the air filter for dirtiness and debris, damage etc. Clean or replace the filter element as necessary. To clean air filters:

- For foam filters, wash the filter in warm water and mild detergent, then rinse and allow to dry.
- For paper filters, use compressed air to blow particles from it, if possible. The air should be blown from the engine side of the filter. Tapping the filter element against a hard surface and brushing the pleats using a soft brush may also help remove debris from the filter.
- For foam filters, place a few drops of clean engine oil on the filter then squeeze it a few times to spread the oil through the filter material and remove any excess oil.
- It is recommended to clean the air filter cover and air intake assembly of any dirt, cuttings etc.

Removal/Installation

To remove the air filter:

1. Depending on model, the air filter cover (**A**) may be secured using a screw (**B**), or clips (**C**) into position. If the cover has a screw, loosen it (rotate left) and remove the cover from the air intake assembly. If the air filter cover is secured with clips, carefully release them – usually, you will need to press the tab of the clip to release it. Carefully remove the air filter cover – some covers may hinge or have protrusions that help locate it against the machine body.
2. Remove the filter element (**D**) – on some models, the air filter can be pulled out directly, other models may require removal of another locating screw or clips.

To install the air filter:

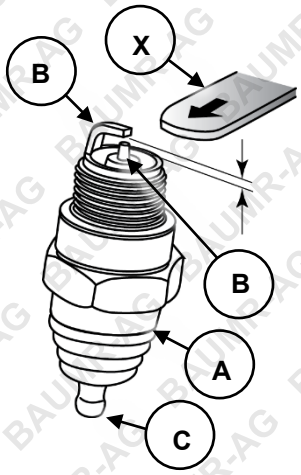
1. Insert the air filter element, and ensure it is correctly positioned in relation to the air intake assembly as it will seat and seal properly in one position only.
2. Re-install the filter cover, ensuring it is fitted properly against the engine and secure it with the screw (rotate right and tighten by hand. Do not over-tighten), or clips.

Spark Plug

If the spark plug is damaged (cracked insulator, broken or eroded electrodes etc), replace it. • Always use spark plugs of the correct "heat range" - see Specifications. • Depending on model, the spark plug may be accessible directly, or may be located underneath the air filter cover.

The spark plug is used to ignite the air/fuel mixture inside the engine. The spark plug has electrodes on one end and an electrical terminal on the other. The spark plug requires regular maintenance.

Cleaning and Gap Checking



The spark plug should be checked and cleaned as per the maintenance schedule.

1. Remove any carbon deposits on the spark plug (**A**) electrodes (**B**) with a wire brush.
2. Clean the spark plug threads and the electrical terminal (**C**) on the top.

To check and adjust the spark plug "gap":

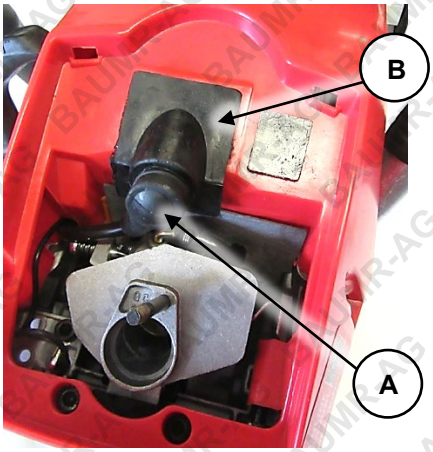
1. Use "feeler" or "thickness" gauges (**X**) to measure the existing gap. The gauge must drag a little when being slid between the electrodes (**2**) – this means the measurement is fairly accurate.
2. Adjust the gap to within specification (see Specifications). If the gap needs to be reduced, gently tap the electrode as required. If the gap needs to be increased, use pliers to gently pull the electrode as required.
3. Measure the gap again and ensure it is within the specified range before re-installing the spark plug.

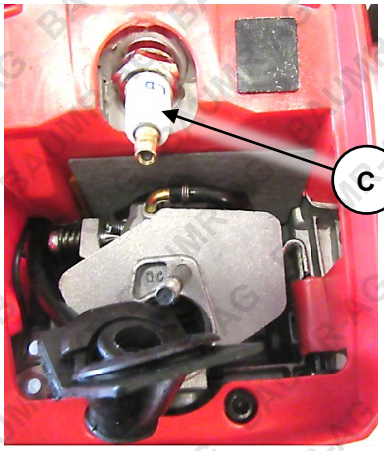
Removal/Installation

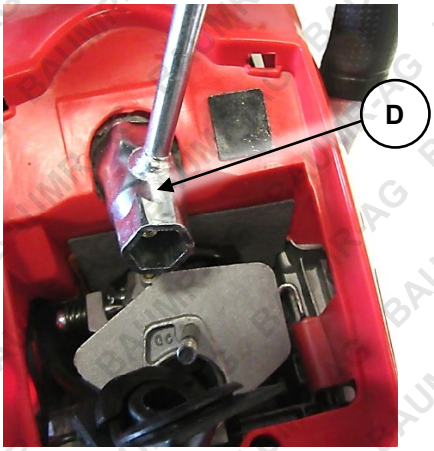
1. Pull the electrical lead (**A**) and rubber boot (**B**) from the terminal on top of the spark plug (**C**). On some models, the spark plug is accessible from underneath the air filter cover and/or underneath the air filter.
2. Clean the area around the spark plug so that no dirt or other material can enter the engine when the spark plug is removed.
3. Use the spark plug tool (**D**) to remove the spark plug (rotate left).

To re-install the spark plug:

1. Place the spark plug in its hole and screw it in (rotate right) until "finger tight".
2. Use the spark plug tool to tighten the spark plug approximately one quarter turn (do not over-tighten).
3. Place the electrical lead over the spark plug terminal and push it down so that it connects firmly terminal.
4. Re-install the rubber boot and ensure that it is seated firmly against the machine body. Re-install any other components (air filter, air filter cover etc) that were removed to access the spark plug.







Fuel Strainer

A dirty or blocked fuel strainer will restrict fuel flow, which can reduce performance and be mistaken as fuel system problems. Check the condition of the fuel strainer before adjusting engine idle speed, where applicable. • If the fuel strainer is no longer serviceable, replace it.

The fuel strainer (if equipped) is used to prevent dirt and other particles from possibly entering the fuel system and engine and causing internal damage to it. The fuel strainer requires regular maintenance as per the maintenance schedule.

Inspection and Cleaning

Inspect the strainer for dirtiness and debris etc. Clean or replace the strainer as necessary. To clean strainers:

- Wash the strainer in clean solvent.
- If possible, use compressed air to assist in removing any blockages. Blow air into the strainer from where it connects to the tube.

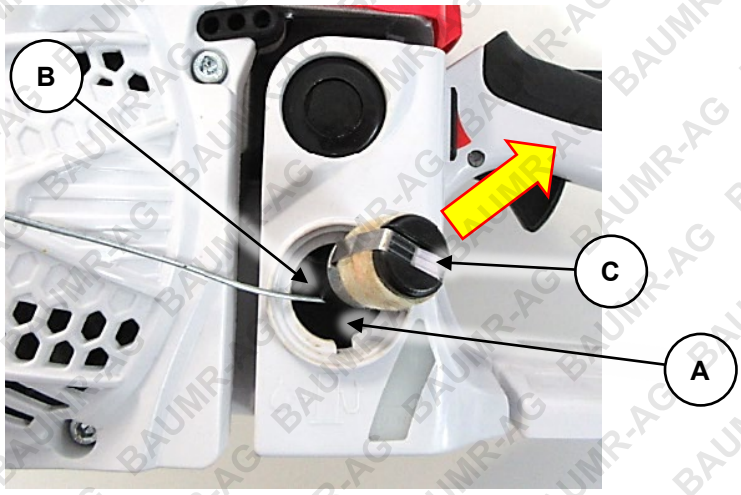
Removal/Installation

To remove the strainer:

1. Place the machine in a horizontal position on a flat and level surface with the fuel filler cap facing up.
2. Remove the fuel tank cap (rotate left) and empty the fuel tank (**A**).
3. Use a hooked object to capture the fuel intake tube (**B**) inside the fuel tank and gently pull it from the tank.
4. The strainer (**C**) is installed on the end of the tube – to remove it, twist and pull it from the end of the tube

To install the strainer:

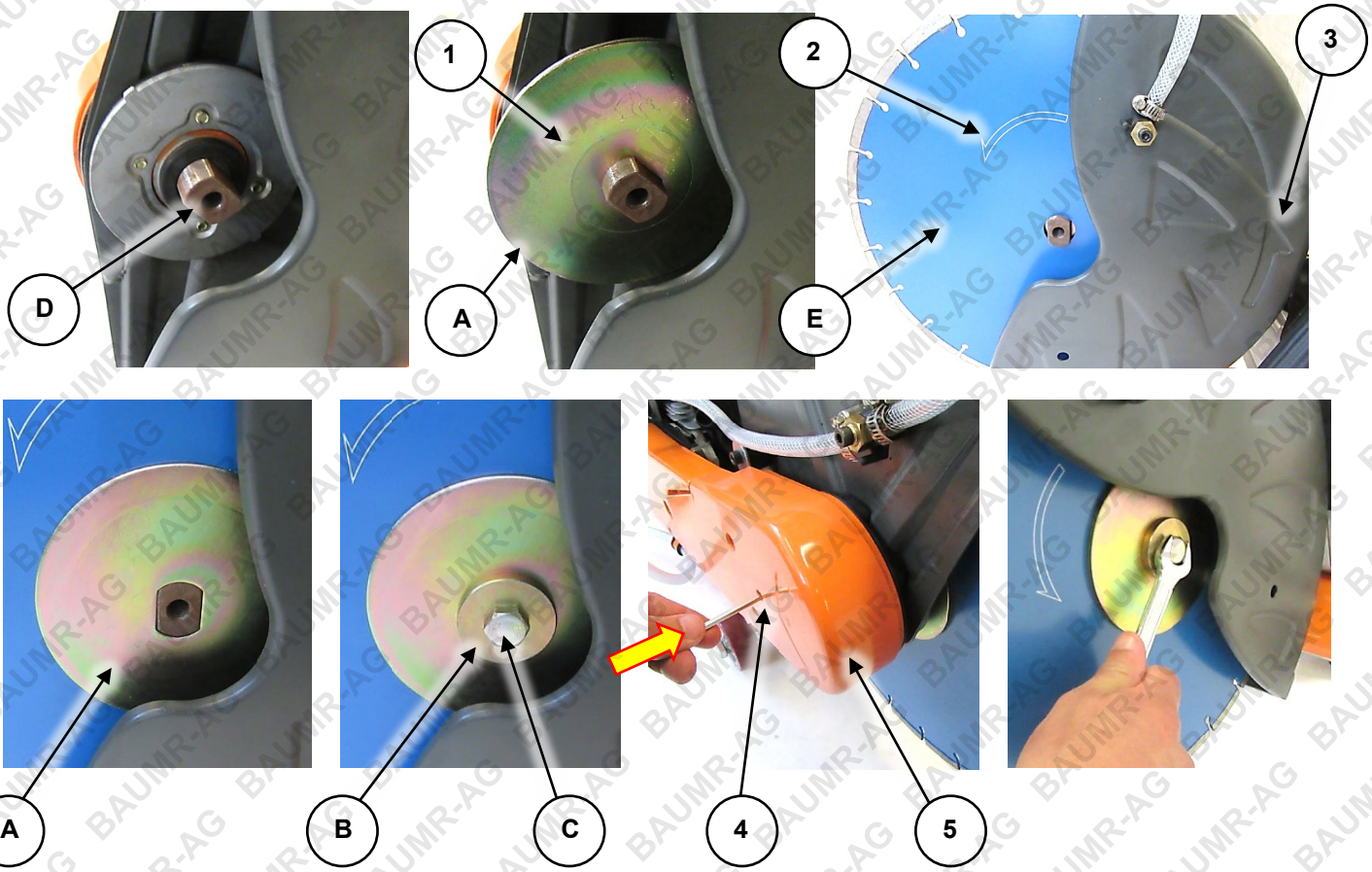
1. Firmly push the strainer onto the fuel intake tube.
2. Place the tube back inside the fuel tank – it should rest along the bottom of the tank. Then, re-install the tank cap.



Cutting Wheel / Disc

Cutting wheels and discs require replacement when worn or damaged. See Cutting Wheels and Discs.

1. If required, remove the flanges (**A**), spacer (**B**) and cutting wheel bolt (**C**) from the spindle (**D**). Ensure that the spindle and all parts are clean. Check that the flanges have no burrs or deformations.
2. Place a flange onto the spindle, with the concave section (**1**) facing toward the cutting wheel position.
3. Place the cutting wheel (**E**) onto the spindle. Ensure that the rotation arrow on the cutting wheel (**2**) is in the same direction as the rotation arrow on the wheel guard (**3**).
4. Place the remaining flange (**A**) onto the spindle, with the concave section facing the cutting wheel.
5. Place the spacer (**B**) into position over the flange, then secure it using the bolt (**C**).
6. Insert an Allen key or suitable object through the hole (**4**) in the belt cover (**5**) and hold it there – this is to help prevent the spindle from rotating when tightening the locking bolt.
7. Use the spanner to firmly tighten (rotate right) the locking bolt. Recommended torque is 18 to 20Nm (13.3 to 14.8ft.lb).



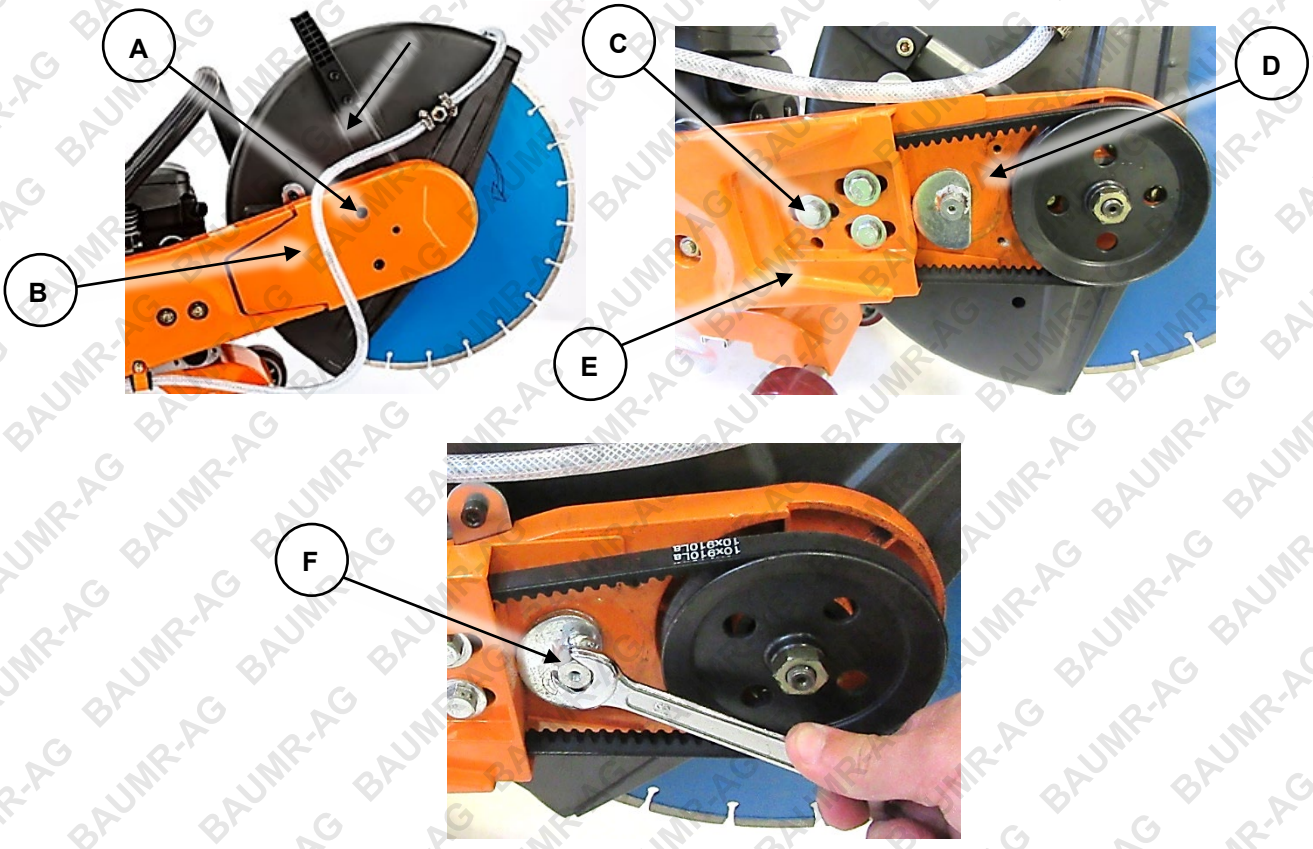
Drive Belt

Ensure that the drive belt is properly tensioned before use. • For new machines or after installing a new belt, adjust belt tension before first use and after the first hour of use. • **Do NOT adjust belt tension with the engine running**.

Correct drive belt tension is extremely important in terms of both machine efficiency, service life and operator safety. If you experience the cutting wheel stopping or noticeable belt slip when using the machine, stop immediately and adjust tension.

Adjusting Tension

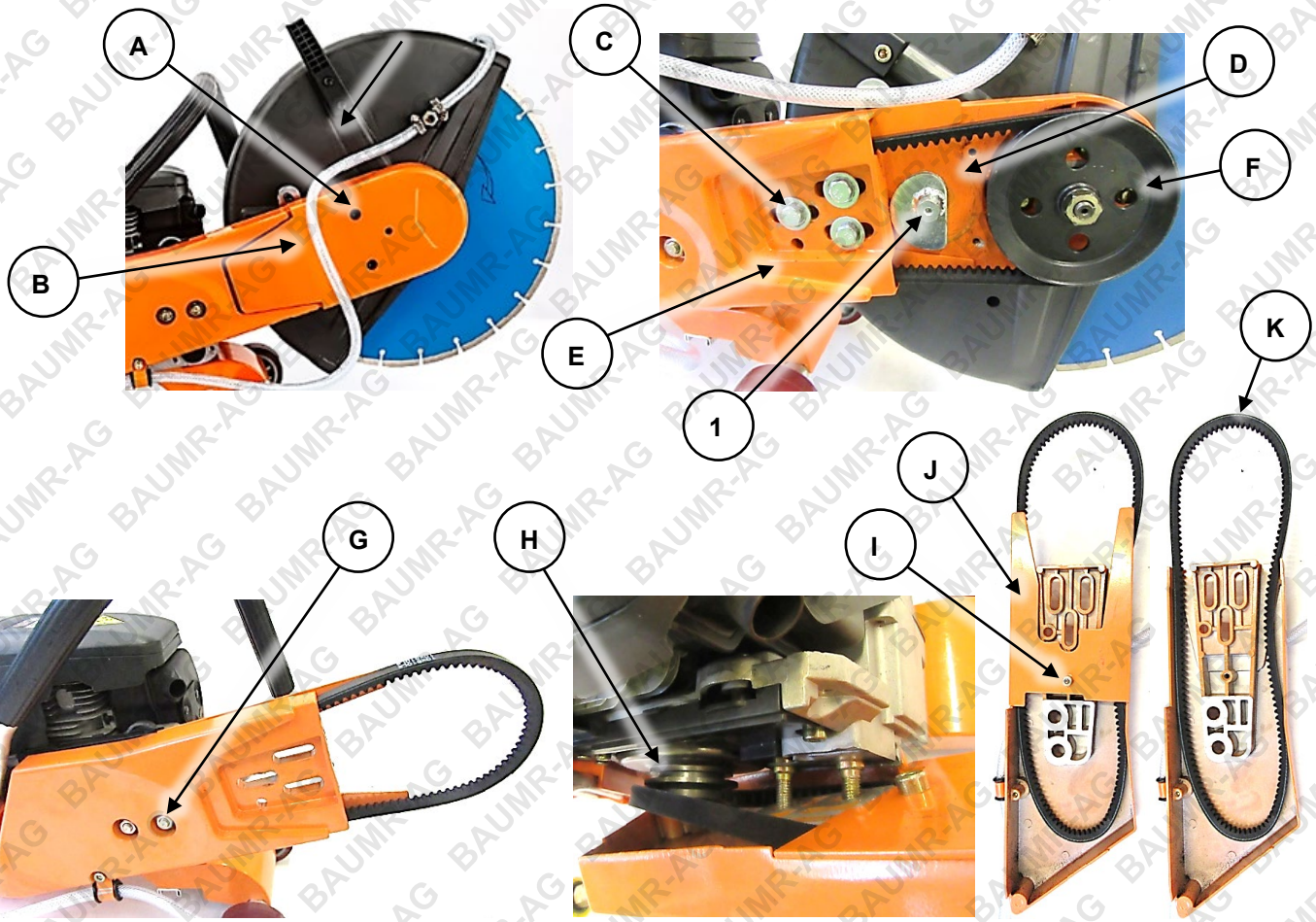
1. Remove the 2 belt cover screws (**A**), and remove the belt cover (**B**). Remove as much dust particles, dirt etc as possible.
2. Using a suitable spanner, loosen the 3 bolts (**C**) securing the pulley arm plate (**D**) to the drive plate (**E**). Do not remove the bolts, just loosen them so the pulley arm plate can be moved.
3. Using a suitable spanner, rotate the tensioning cam (**F**) right (clockwise) to increase belt tension. Belt tension is correct when there is minimal deflection when you press against the belts.
4. Firmly tighten the 3 pulley arm plate bolts. Recommended torque for these bolts is 30Nm (22ft.lb).
5. Re-install the belt cover. Firmly tighten the belt cover screws.



Removal/Installation

1. Remove the 2 belt cover screws (**A**), and remove the belt cover (**B**). Remove as much dust particles, dirt etc as possible. It is recommended to back off (rotate left) the tensioning cam (**1**).
2. Using a suitable spanner, remove the 3 bolts (**C**) securing the pulley arm plate (**D**) to the drive plate (**E**). Unhook the belt from the driven pulley (**F**), then carefully remove the pulley arm plate and cutting head.
3. Using a suitable spanner, remove the 2 nuts (**G**) securing the drive plate to the mounting studs. Carefully remove the drive plate, unhooking the belt from the drive pulley (**H**).

4. On the reverse side of the drive plate, use a 5mm Allen key to remove the screw (**I**) securing the dust cover (**J**). Remove the dust cover – the belt (**K**) can be removed.



5. Insert the replacement belt into the drive plate – if it has any rotation direction markings on it, make sure that it is installed to rotate in the correct direction. Re-install the dust cover and secure it using the screw.
6. Bring the drive plate / belt assembly up to its installation position. Hook the belt over the drive pulley, then install the drive plate onto the mounting studs. Re-install the drive plate nuts and firmly tighten them.
7. Re-install the pulley arm plate / cutting head assembly to the drive plate and attach it using the 3 bolts. Do not tighten the bolts at this point.
8. Hook the belt over the driven pulley, then tension the belt.

Engine Tuning Guidelines

Running combustion engines in confined areas **CAN KILL IN MINUTES**. Engine exhaust fumes contain carbon-monoxide – a deadly gas that you cannot smell or see. NEVER run a combustion engine in confined areas EVEN IF windows and doors are open. ONLY run combustion engines OUTDOORS and away from doors, windows and vents. • Petrol / fuel / gasoline is extremely flammable – keep clear of naked flames or other ignition sources. • Do not have the engine running during inspection and maintenance unless specifically required. • The engine should be cool enough to touch before performing maintenance activities. • Some maintenance activities may be beyond the scope of some users. Do NOT attempt procedures that you are not comfortable with, or do not have the necessary tools, experience or knowledge for – take the unit to an authorised service centre or qualified technician for servicing. • **Failure to follow the maintenance schedule, using incorrect or non-compatible accessories or replacements parts, or general negligence may result in making the product warranty void**. • Improper tuning can lead to engine failure – **engine failure due to improper tuning is not covered under warranty**. • If you cannot tune the engine, contact an authorised service centre for assistance or have the machine checked by a small engine specialist. • The carburettor is supplied factory-set and should run properly. Engine tuning should be attempted only if the machine shows signs of requiring adjustment. • A tachometer is recommended for setting engine idle and full throttle speeds.

The engine must be maintained in a reasonable "state of tune" to ensure best performance and safety. If the engine is running roughly, emitting excessive smoke, not revving properly, not idling properly, showing signs of reduced power, not responding crisply to the throttle etc, it may require "tuning". Basic tuning for 2-stroke engines is not difficult, however, care should be taken in understanding the tuning process and learning how to recognise the symptoms for when engine tuning is required and where and how to make adjustments. Note that factors such as altitude, fuel mixture, ambient temperature etc may all affect engine running characteristics. There are two basic engine conditions that determine improper tune:

- **Rich** - An adjustment that is too rich will cause the engine to smoke, have insufficient power, result in additional carbon build up and may damage the engine. The proportion of fuel in the air/fuel mixture is so high that the fuel does not burn well. The partially burned mixture is expelled into the exhaust and exits the engine as smoke. Carbon build-up may affect the performance of the spark arrestor (if equipped) and cylinder ports if run for a period of time. Outside of carburettor adjustments this can also be caused by having too much oil mixed with the fuel, and/or old fuel.
- **Lean** - An adjustment that is too lean will also cause the engine to have insufficient power and is more likely to damage the engine than a rich mixture. The proportion of fuel in the air/fuel mixture is so low that there is not enough fuel to burn. Lean running causes the cylinder temperature to rise, which often leads to engine seizure, and for excessive revving which may result in connecting rod bearing failure. Other causes for a lean running condition include lack of oil in the fuel mix, and when the fuel tank runs empty.

Before any engine tuning:

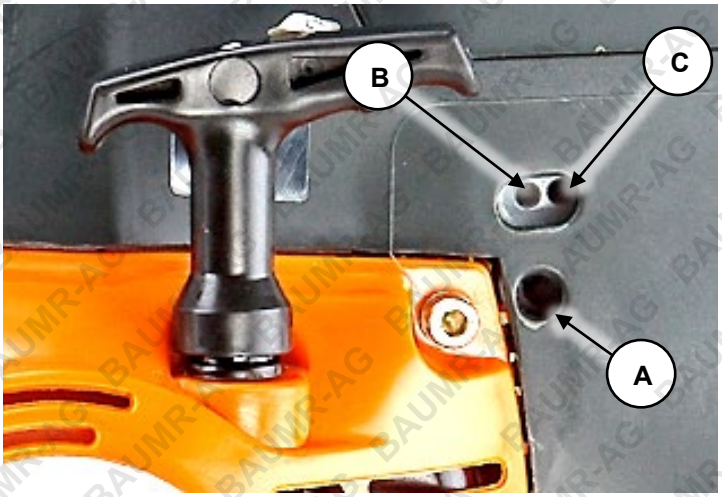
- Service the air filter.
- Service the spark plug.
- Use fresh fuel.

Carburettor Adjustments

The carburettor has 3 adjustments available:

- **Idle Speed** – Controls how open the throttle is when the throttle is released. If idle speed is set too low, the engine will stop when the throttle is released due to a lack of air/fuel mixture. If idle speed is set too high, the engine will run when the throttle is released, however, at a speed that will engage the clutch and cause the saw chain to rotate – this is a dangerous condition that should never be allowed.
- **Low Speed Mixture** – Controls the proportion of fuel in the air/fuel mixture at idle speed. If the low speed mixture is too rich, the engine will load up when idling and then stop. If the low speed mixture is too lean, the engine will race or surge when idling and then stop.
- **High Speed Mixture** – Controls the proportion of fuel in the air/fuel mixture at working speed. If the high speed mixture is too rich, the engine may not reach the speed necessary for maximum power, emit excessive smoke and respond poorly to throttle movement. If the high speed mixture is too lean, the engine may reach speeds where bearing failure and piston seizure are likely. It will also lack power and tend to run very hot.

The adjustment screws are generally located on the starter cord side of the unit. The high speed and low speed mixture screws are generally marked "L" and "H", respectively. In the adjacent image, idle speed is (**A**), low speed mixture is (**B**) and high speed mixture is (**C**).



Factory Settings

Each adjustment screw has a general "factory setting", which is measured from the adjustment screw being rotated "IN" (right / clockwise) until fully seated (but not tight). From this point, the setting is made by counting the number of full rotations of the screw "OUT" (rotate left / anti-clockwise). Factory settings are:

- **Idle Speed** – Approximately 5 turns out.
- **Low Speed Mixture** – Approximately 2.5 turn out.
- **High Speed Mixture** – Approximately 2 turns out.

Use the factory settings as the basis for tuning. Set all adjustment screws to factory settings, then test the engine before further tuning. Use a suitable flat-blade screwdriver and ensure that the screwdriver is properly engaged with the adjustment screw before rotating.

Tuning

1. Start and allow the engine to idle until it is warmed up – tuning a cold engine will result in rich running when the engine is warm. If the engine does not idle, use the throttle to keep the engine running ("blip" the throttle; do not run the engine continuously at high speed).
2. **Adjust Idle Speed** – Rotate the adjustment screw one quarter (¼) turn at a time – rotate "IN" (right / clockwise) to increase idle speed; rotate "OUT" (left / anti-clockwise) to reduce idle speed. Set the speed so the engine idles as fast as possible without engaging the clutch. Never set the idle so the saw chain rotates when the throttle is released. If the engine will not idle, adjust the low speed mixture (step 3).
3. **Adjust Low Speed Mixture** – Rotate the adjustment screw one quarter (¼) turn at a time – rotate "IN" (right / clockwise) to lean the low speed mixture; rotate "OUT" (left / anti-clockwise) to richen low speed mixture. Rotate the screw IN until the engine begins surging or wants to stop – this is the lean adjustment position. Make a note of the number of rotations of the screw to reach the lean adjustment position. Then, rotate the adjustment screw OUT – the engine should start running better. Keep rotating the screw OUT until the engine starts to load up – this is the rich adjustment position. Make a note of the number of rotations of the screw to reach the rich adjustment position and compare it to the lean adjustment position. Then, rotate the screw IN to a position where the engine idles best – it should be about midway between the rich and lean position settings. At this point, you may have to re-adjust idle speed (step 2).
4. **Adjust High Speed Mixture** – Rotate the adjustment screw one quarter (¼) turn at a time – rotate "IN" (right / clockwise) to lean the high speed mixture; rotate "OUT" (left / anti-clockwise) to richen high speed mixture. Rotate the screw OUT until the engine begins slowing and running roughly at full throttle. Then, rotate the adjustment screw IN – the engine should start running better. Keep rotating the screw IN until the engine reaches maximum speed. Then, rotate the screw OUT one eigth (1/8) to one quarter (¼) of a turn to richen the air/fuel mixture for engine cooling purposes.

Cleaning Guidelines

Do not use solvents, chemicals or abrasives when cleaning the machine, as some surfaces may be damaged. • Wear gloves or use suitable tools to assist in cleaning – do not use bare hands. • Clean the machine after every use to ensure best performance and longest service life.

Perform the following procedures after EVERY use:

- Use a slightly damp cloth and mild detergent for cleaning the outer surfaces of the machine.
- Use a brush for parts that are difficult to reach.
- Ensure air vents and surfaces designed for heat dissipation are clean and free of obstructions or debris.
- Remove the belt cover and clean away any concrete dust, particles, dirt etc from the belt housing, belt, driven pulley etc.
- Adjust drive belt tension, if required.
- Ensure all guards and safety devices are clean and functioning correctly.
- Ensure that spring-loaded parts, such as the throttle, return to the normal position when released.
- Ensure that all control cables, levers, switches etc are clean and operate normally and smoothly.
- Clean the air filter service.

Transportation and Storage

Always ensure that the machine is cool enough to touch before transporting or storing. • Petrol/fuel/gasoline is extremely flammable – keep clear of naked flames or other ignition sources. • Always transport the machine with the fuel tap and engine ON / OFF switch (where applicable) in the "OFF" position. • Drain the fuel tank before transportation or storage.

Preparing for Transport and Storage

- Drain the fuel system by allowing the engine to run until it stops. It is advised to have the fuel tank as empty as possible before draining.
- Ensure that the fuel tap (if applicable), engine ON/OFF or key switch (where applicable) is in the "OFF" position.
- Disconnect the spark plug lead.
- Avoid exposing the equipment to direct sunlight, particularly during transportation.
- Ensure the equipment is secure and upright during transport.
- Store the unit in a dry, well-ventilated area and out of the reach of children.

Long Term Storage

Follow the normal procedures for storage, then:

- Unscrew (rotate left) the carburettor drain plug. Use a suitable container to catch the draining fuel, and allow the fuel to drain. Store the drained fuel in a properly sealed container.
- Re-install (rotate right) the carburettor drain plug and tighten.
- Remove the spark plug and put 10ml of clean engine oil into the cylinder. Pull the starter cord slowly to distribute the oil. Re-install the spark plug.
- Cover the equipment to protect it.

Troubleshooting

Running combustion engines in confined areas **CAN KILL IN MINUTES**. Engine exhaust fumes contain carbon-monoxide – a deadly gas that you cannot smell or see. NEVER run a combustion engine in confined areas EVEN IF windows and doors are open. ONLY run combustion engines OUTDOORS and away from doors, windows and vents. • Petrol / fuel / gasoline is extremely flammable – keep clear of naked flames or other ignition sources. • Do not have the engine running during inspection and maintenance unless specifically required. • The engine should be cool enough to touch before performing maintenance activities. • Some maintenance activities may be beyond the scope of some users. Do NOT attempt procedures that you are not comfortable with, or do not have the necessary tools, experience or knowledge for – take the unit to an authorised service centre or qualified technician for servicing.

The following information may assist in identifying a problem and rectifying it.

Difficulty starting the engine.

Possible Fault	Action
Lack of fuel or bad fuel mixture	Ensure that there is sufficient fuel in the tank. Use new fuel and ensure the 2-stroke engine oil mixture is correct.
Engine "OFF"	Ensure engine ON/OFF switch is in the "ON" position.
Carbon build-up on spark plug	Perform a spark plug service.
Spark plug faulty	Remove the spark plug, then reconnect the plug lead to it. Place the engine ON/OFF switch in "ON" position (if applicable). Touch the spark plug electrode to a part of the engine crankcase, away from the spark plug hole, and attempt to start the engine – a spark should be visible across the electrodes as the engine is rotated. If no spark is visible, replace the spark plug.
Engine "flooded" with fuel	Place the choke in "HOT" or "RUN" position. Leave the engine ON/OFF switch in the "OFF" position. Remove the spark plug. Pull the starter cord several times to assist clearing excess fuel from the engine before attempting to start engine.

Engine starts but does not idle.

Possible Fault	Action
Blocked air filter	Perform an air filter service.
Idle speed requires adjustment	Adjust idle speed until engine runs smoothly and at a reasonable speed when idling.

Cutting is poor.

Possible Fault	Action
Cutting wheel/disc dull or damaged	Sharpen or replace cutting wheel / disc.
Drive belt under-tension	Tension drive belt.
Engine in poor state of tune	Tune engine.

Engine stops suddenly during use.

Possible Fault	Action
No fuel	Check fuel level and ensure adequate fuel is available.
Saw chain jammed	Remove saw chain from jammed material. Change cutting method or use wedges etc to prevent jamming the saw chain.
Overheating causing engine seizure	Allow engine to cool before restarting. Ensure all air vents and heat dissipation surface are clean and free of debris. Adjust high speed mixture to richen air/fuel mixture. If possible, improve engine cooling, such as operating in lower temperatures or reducing intensity of workload.
Carbon build-up on spark plug	Perform a spark plug service.
Carburettor blocked	Clean the carburettor.

Reduced engine speed/power during use or engine running poorly at cutting speed.

Possible Fault	Action
Blocked air filter	Perform an air filter service.
Overheating	Allow engine to cool before restarting. Ensure all air vents and heat dissipation surface are clean and free of debris. Adjust high speed mixture to richen air/fuel mixture. If possible, improve engine cooling, such as operating in lower temperatures or reducing intensity of workload.
Engine in poor state of tune	Tune engine.
Carbon build-up on spark plug	Perform a spark plug service.
Carbon build-up in engine and/or entry to exhaust silencer	Remove the engine cylinder head and clean any carbon from the combustion chamber. For the exhaust silencer, remove it and clean any carbon deposits from the exhaust entry port.
Carburettor blocked	Clean the carburettor.

Excessive vibration.

Possible Fault	Action
Cutting wheel/disc dull or damaged	Sharpen or replace cutting wheel/disc.
Fasteners loose	Check all accessible fasteners (not carburettor adjustment screws) for tightness.

Specifications

Type	2-stroke, single cylinder
Fuel	Non-ethanol unleaded petrol (higher RON values provide best performance)
Spark Plug	L8RTF
Spark Plug Gap	0.5 to 0.6mm (0.020 to 0.024”)
Cutting Wheel / Disc	350 x 7.0 x 25.4mm (spindle)
Cutting Speed	5100RPM / 90m/s

Engine Service and Maintenance Record

Use the following tables as a record of machine servicing and maintenance. Keeping accurate records will help ensure longest machine service life and may simplify fault diagnosis and any possible warranty claims. Fill out date, number of hours of use and the activity performed, as required (see Maintenance Schedule).

Date	Hours Use	Maintenance Task / Notes

Some experts believe the incorrect or prolonged use of almost any product could cause serious injury or death. For information that may reduce your risk of serious injury or death, consult the points below and additionally, the information available at www.datastreamserver.com/safety

- Consult all documentation, packaging and product labelling before use. Note that some products feature online documentation which should be printed and kept with the product.
- Check product for loose / broken / damaged / missing parts, wear or leaks (if applicable) before each use. Never use a product with loose / broken / damaged / missing parts, wear or leaks (if applicable).
- Products must be inspected and serviced (if applicable) by a qualified specialist every 6 months assuming average residential use by a person of average weight and strength, above average technical aptitude, on a property matching average metropolitan specification. Intended use outside these guidelines could indicate the product is not suitable for intended use or may require more regular inspection or servicing.
- Ensure all possible users of the product have completed an industry recognized training course before being given access to the product.
- The product has been supplied by a general merchandise retailer that may not be familiar with your specific application or your description of the application. Be sure to attain third-party approval for your application from a qualified specialist before use regardless of prior assurances by the retailer or its representatives.
- This product is not intended for use where fail-safe operation is required. As with any product (take an automobile, aircraft, computer or ball point pen for example), there is always a small chance of technical issues that needs to be repaired or may require replacement of the product or a part. If the possibility of such failure and the associated time it takes to rectify could in any situation inconvenience the user, business or employee then the product is not suitable for your requirements. This product is not for use where incorrect operation or a failure of any kind, including but not limited to a condition requiring product return, replacement, service by a technician or replacement of parts could cause a financial loss, loss of employee time or an inconvenience requiring compensation.
- If this item has been purchased in error after considering the points above, simply contact the retailer directly for details of their returns policy, if required.